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Abstract

Producing and reproducing nature: research into synthetics, simulations, and representations of nature in popular and print-based visual culture.

The presentation of the thesis comprises the Studio Practice component (80%), which takes the form of an exhibition of print-based works on paper and objects exhibited at the Australian National Capital Artists (ANCA) Gallery from 20–29 April, 2001, and the Studio Practice Report which documents the nature of the course of study undertaken, together with a written Sub-thesis (20%). The Studio Practice component of the thesis has been based in the Printmedia and Drawing Workshop and has examined the topic in relation to print-based and other objects. The Sub-thesis is presented as two papers. The first undertakes an analysis of Jean Baudrillard's conception of the 'code' and its relationship to representations of nature in Steven Spielberg's *Jurassic Park*. The second paper examines the relationship of prints to space in the work of four contemporary artists.

DECLARATION OF ORIGINALITY

I, A Munro (19/4/2001) hereby declare that the thesis here presented is the outcome of the research project I have undertaken during my candidacy, that I am the sole author unless otherwise indicated, and that I have fully documented the source of ideas, references, quotations or paraphrases attributable to other authors.

Acknowledgements

My most grateful thanks to my supervisors Patsy Payne, Matthew Holt and Nigel Lendon, for their advice, critique and support throughout the project. Thanks also to Barb McConchie and Erica Seccombe, my studio-mates at various times over the last few years, who provided both critical feedback and friendship. Finally, thanks to my family, Nick Stranks and Callum White, for their absolute patience.

Contents

Sub thesis 1: Wrapped in text: The coded texts of Steven Spielberg's *Jurassic Park*

Introduction:

The codes with which we represent nature, from Linnaean classifications to the codes of contemporary genetic technology, do not merely act as storehouses for information. Far from being static and stable, codes mediate and unleash new understandings of the natural world. The texts of popular culture, both as codes and as encoding media, are influential and active in the formulation of ideas relating to nature. These coded simulations do not always merely represent, but may create entirely new entities, new codes, and possibly in a paradoxical twist, give life to new forms of nature.

The paper presents an analysis of the many codes present in Steven Spielberg's film Jurassic Park*—from the narrative premise of genetic engineering, and the codes of 'dino-DNA', to the digital animation which is another form of code used to 'bring the dinosaurs to life'. Narratives such as* Jurassic Park *have the potential to embody illustrations of Jean Baudrillard's theories on the contemporary world of simulation. But* Jurassic Park *can also illustrate possible short-comings in Baudrillard's conception of the codes which make simulation possible. By undertaking an analysis of Spielberg's use of the codes of simulation in the movie, it may be possible to see these codes, not as the passive, shadowy tools of a nightmarish future, but as active agents in the creation of new ways of thinking about the natural world and its simulation.*

Various examples of the codes of 'reproductive' technology present in the film are used to undertake a critique of Baudrillard's positioning of 'the code' as a passive, operational subject in his essays The Precession of the Simulacra *and* The Orders of the Simulacra. *From this examination, an argument is made for the codes of contemporary visual and scientific technologies, as evidenced in Spielberg's* Jurassic Park, *to be seen as active, unpredictable agents, as the creators of meaning as well as the carriers.*

fig. 1.1 You are now entering Jurassic Park. The gates marking the park entry on Isla Nubla.

1. Dino data

With a loud smash, the velociraptor breaks through the glass into the secure area of the computer control room just as Grant, Sattler and the children disappear via a ladder into the ceiling cavity above the room. The dinosaur is extremely agile and lands easily on the desk in front of a bank of computer monitors. The monitors all show the Jurassic Park logo in black and white, and cast light into the darkened room. The velociraptor scans the room and looks up to the ceiling space, an area constructed of square panels of gridded metal mesh, where the humans have sought refuge. A blue light shines through the mesh.

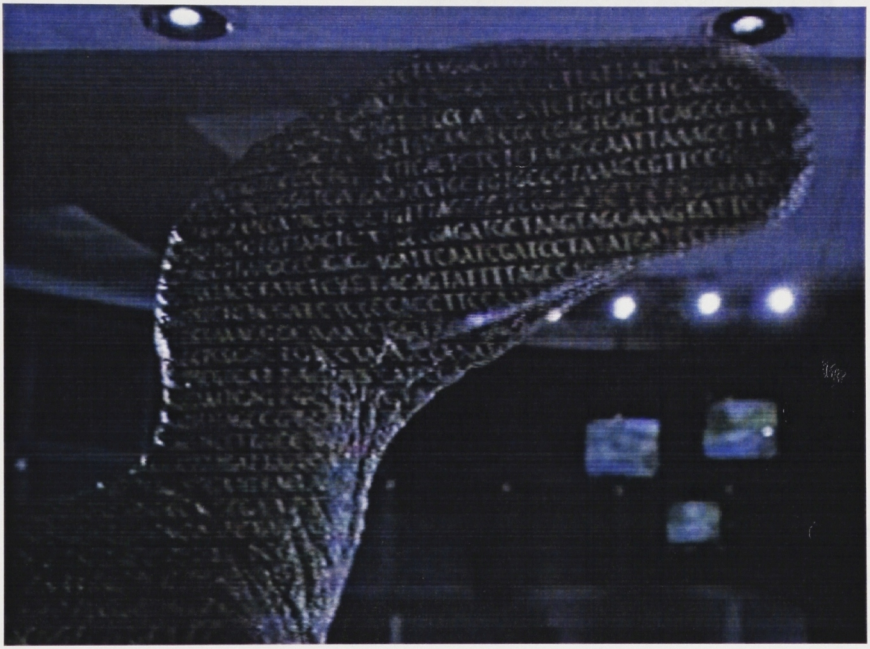

fig. 1.2 The velocirapator 'wrapped' in genetic text.

The camera cuts to the velociraptor once more and the screen fills with a close up of the dinosaur's head. Rather than being bathed in the blue gridded light filtering through from the ceiling cavity above, or the blue-grey of the computer monitors below, the dinosaur is covered by a cast of mottled yellow-green light of unknown origin. As the dinosaur lets forth a low threatening snarl the light becomes clearer and the greenish-yellow pattern "projected" onto the reptile's skin reveals itself to be text—the letters C, G, A, and T—the signifiers of the proteins comprising the DNA code of all living thing. The text is arranged in rows, with the four letters of the code being repeated in groups of four: CCAT GACT CCGA ATAG CGAT and so

on, as if describing the genetic profile of the creature as it simultaneously describes the creature's physical contours.

The dinosaur pauses and its image is momentarily captured under the text—the velociraptor wrapped in text. The projected light of the genetic pattern mimics the green, yellow and black patterns which naturally appear on reptile skin, and which provide camouflage and safety. The text fits exactly over its body, mapping every contour and wrinkle, concealing the physical texture of its skin, but not restricting its movement. The text stretches and distorts to cover the velociraptor's limbs and chest.

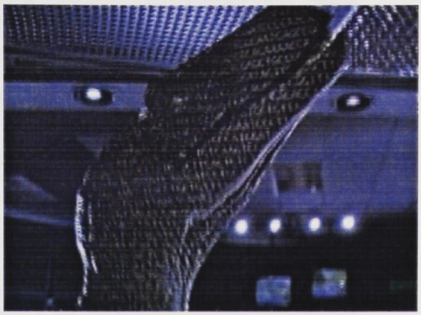

fig. 1.3 The velociraptor turns its head, moving within its web of text.

The dinosaur looks up and turns its head, spotting its human prey above. As it moves the text moves to stay wrapped around the body, and seems now to envelope the dinosaur. As the dinosaur pauses, the text describes its contours for a moment and then, as the dinosaur moves, the texts can be read differently, allowing the reader of the code to see new configurations of coded information. The genetic texts can describe but cannot completely contain.

Why should Spielberg chose to present an image of the dinosaur in combination with projected text, given his access to sophisticated computer image-wrapping techniques to enclose the dinosaur in text? Projections imply that the projected image has emitted from a source other than that on which it appears. The projected image remains external to the surface onto which it is screened. Spielberg's use of projected code can be interpreted as a metaphor for the many coded texts that have been created in an attempt to map or describe nature, and the impossibility of containing the natural world with a universal description. The surface onto which the codes are projected will always move, mutate, or be subject to a variety of readings, which result in the object remaining slightly outside the reach of its coded description.

The dinosaur growls, revealing sharp teeth and red gums, and a space over which the coded text does not map itself. Or is it a void into which the code disappears? The colour and space of the velociraptor's mouth disturb the visual patterns of green running smoothly over the dinosaur's head. As if to parallel the

beginnings of the disappearance of the code on the dinosaurs skin, the camera begins to pan and the velociraptor disappears out of the left hand side of the frame which now brings into focus the metal grids containing, but not concealing, the humans above.

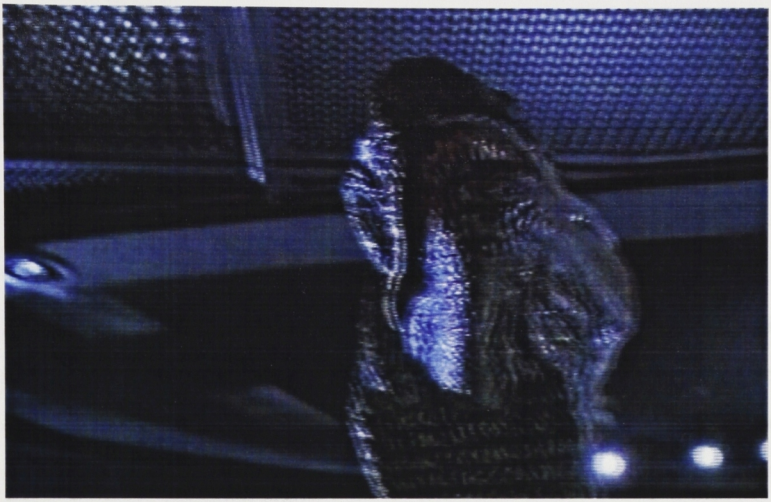

fig. 1.4 The dinosaur growls revealing red gums and a dark space into which the text disappears.

2. The codes of Jean Baudrillard

In his essays *Precession of the Simulacra* and *Orders of the Simulacra*,[1] Jean Baudrillard writes about orders of representation and image making. He proposes that the contemporary era, which he calls the 'era of simulation', is one in which representation is "no longer that of the map, the double, the mirror or the concept. Simulation is no longer that of a territory, a referential being or substance. It is the generation of models of a real without origin or reality: a hyperreal." [2] This era is characterised by 'the code' which he describes as 'miniaturised units...matrices, memory banks and command models"[3], of which the DNA codes of genetic engineering, and the digital codes of computer systems can be seen to be examples. He suggests

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[1] Both these essays appear in Baudrillard, Jean *Simulations*, Paul Foss et. al. (trans), New York: Semiotext(e), 1983 .

[2] Baudrillard, Jean "The Precession of the Simulacra", ibid., p2.

[3] ibid, p2. Lechte, John., *Fifty Key Contemporary Thinkers*, London: Routledge, 1994, p234

that such codes provide "a ... programmatic, perfect descriptive machine, which provides all the signs of the real and short-circuits all its vicissitudes."[4] John Lechte has noted that Baudrillard has not clearly defined his usage of the term 'code', but, from context, he interprets Baudrillard as referring to the code in quite a straightforward manner, as "the binary code of computer technology...the DNA code in biology, or the digital code in television and sound recording..."[5]. In this paper I concur with Lechte's interpretation of Baudrillard's writing, but extend the definition of the code to take into account John Fiske's definition of a code as a system into which signs are organised, transmittable and which relies upon a common agreement among users as to the rules of usage[6].

According to Baudrillard, the code allows for the production of identical copies in potentially infinite series. Baudrillard distinguishes between copies and simulations in his various discussions of the 'orders of the simulacra'. In terms of my discussions in this paper, simulations are taken to be a sub-set of the copy: copying involves producing something to resemble something else, whereas a simulation is a copy which is perceived to be exactly the same as its original. A copy resembles, but a simulation takes the mimesis further and is indistinguishable from the original. In Baudrillard's era of simulation, the 'third order of the simulacra', it is 'the code' which enables copies to be produced which do not refer to an original or real thing, but to a set of coded commands, to a data set or coded algorithm, from which the real is generated.

It follows from this, according to Baudrillard, that the code provides absolute control of the copying process and product: the code provides a mechanism which, through the simple repetition of a set of commands, will produce exactly the same object every time: perfect codes, perfect copies, perfect control.

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[4] ibid, p4.

[5] Lechte, John., *Fifty Key Contemporary Thinkers*, London: Routledge, 1994, p234.

[6] Fiske, John *Introduction to Communication Studies*, London: Methuen, 1982. My analysis concentrates upon digital codes, but also takes into consideration the analogic, as these are sometimes very difficult to distinguish from the digital, or in the act of transmission/reception a transformation occurs from digital information to analogue (eg when through animation technology, we may perceive digital imagery as continuous (analogue) movement).

3. The codes of Jurassic Park

All this may seem a far cry from the prehistoric world of dinosaurs. Or it did until Steven Spielberg's movie *Jurassic Park* became one of the biggest cinema draw cards of all time. Baudrillardian codes are everywhere in *Jurassic Park*. And so are copies, copies produced from codes and copies of codes. In *Jurassic Park*, copies make use of the code to produce new codes. This 'breaking' of the code also ensures it continues on, 'out-of-control', yet it also presents a regression to the familiar laws of natural selection. Thus the agency of the copies (and codes) in *Jurassic Park* seems to pose problems for Baudrillard's conception of the code as the predictable and perfect descriptive machine. As John Lechte has noted, Spielberg's *Jurassic Park* indicates that it is possible to remain just beyond the reach of Baudrillard's code.[7]

The codes and copies of Spielberg's *Jurassic Park* are present in a proliferation of forms. Of course, the codes of the genetic information, copied from fragments of dinosaur DNA to produce, within the movie, living, breathing simulations of the pre-historic world, are an obvious example. Codes and copies can also be seen in the mimicking of 'natural' reproduction in the portrayal of the processes of genetic engineering and in the digital imagery and computer graphics used to bring the dinosaurs to life on the cinema screen. Spielberg also makes use of scientific codes—language, practices—to present an extremely credible narrative in the form of the DNA storyline, making use of the scientific speculations and interests of the time to present a fiction which is firmly grounded in facts.

The narrative potential of codes and copies is developed as the central logic of the movie. There is the robotic 'mother' who mimics animal behaviour in her monitoring of the precious dinosaur eggs, reprimanding the human who disrupts the pattern of care which has been programmed onto her memory chip. The park modelled on zoos and adventure parks, a zoological/paleontological/botanical garden, echoing the history of botanical and zoological gardens as copies of Eden, and where nature is recorded and encoded, named and stored in an

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7 Lechte J., *Fifty Key Contemporary Thinkers*, London: Routledge, 1994, p236.

attempt to catalogue God's creations. On Jurassic Park this encoding, storage and cataloguing does not attempt to merely archive the natural world but to copy it, re-produce it...[8]

fig. 1.5 The robot 'mother' reprimands Grant for handling the dinosaur eggs.

The codes and copies are also present in the representational form of the dinosaurs themselves, copied from paleontological reconstructions and speculations. As with the representation of dinosaurs extended in *Walking with Dinosaurs,* the dinosaurs have been copied from the collections of natural history museums and the pages of scientific texts and provided with extra features such as movement, colour and sound.[9] As such, these copies possess more information than that on which they were modelled. Unlike the coded piles of bones and the pages of scientific description of 'real' palaeontology, Spielberg's dinosaurs, at least within the movie narrative, are very dangerous!

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[8] Do the dinosaurs suggest the biblical dimensions of a second coming? There are a number of biblical allusions within the movie: Hammond, the park owner and character who 'plays God' with nature is a kindly, bearded old man dressed all in white, while Ian Malcolm, the advocate of chaos theory is dressed entirely in black. Recent American popular culture is redolent with such metaphors, for example, the virgin birth in *Star Wars: Episode I*..

[9] The 1999 BBC production, *Walking with Dinosaurs*, presented a visual, computer-generated, simulation of the dinosaurs but also simulated the codes of television culture in presenting the program as a wildlife documentary.

The extra information with which these dinosaurs are endowed raises again the relationship of the copy and the simulation. Spielberg presents a scenario which moves beyond Baudrillard's conception of simulation as copy which exactly replicates the coded data on which it was based. Whereas Steven Spielberg's dinosaurs have their origins in the text of Michael Crichton's book *Jurassic Park*, evolving from the code of the science fiction novel to that of the monster movie, the radical suggestion of *Jurassic Park* is the sense in which Spielberg hints that it is possible to conceive a copy which moves beyond the doppelganger to contain *more* information, *new* information.

The scenario enacted by the dinosaurs of *Jurassic Park* may indicate that Baudrillard's description of the code as the 'perfect descriptive machine' is perhaps not so perfect. In the movie, the code is far from controlled or controllable. The scene in the movie in which the velociraptor appears under a veil of genetic code can be seen as a visual metonym for the movie's larger narrative—that the dinosaurs can be mapped by the code, but not contained or constrained by it. Once the code had a physical manifestation in the form of the dinosaurs of Jurassic Park, the agency of 'life' and chance took over from the control of the codes of genetic engineering. In an ironic *non sequitur*, Spielberg alludes to this potential agency of the code when his character Ian Malcolm, a scientist specialising in chaos theory, says of the natural world, "Life finds a way..."

4. Breaking the codes of time

In the movie it becomes apparent that what truly offends the scientists is not the immediate danger posed by the dinosaurs, or even the possibility of the creatures escaping from the island. Rather, it is the disruption, the breaking or transgressing of the scientific/evolutionary encoding of time, to which they object. This reflects much of the popular debates around actual scientific experimentation and genetic engineering which became so prominent in the late 20th century.

We are very familiar with time-lines and the idea that these segmented linear diagrams somehow represent the relationship between prehistoric time and the natural world.

Sometimes horizontal, and sometimes drawn vertically like the geographical strata from which dinosaur bones are retrieved, we are taught that each segment is mutually exclusive, shown by its distinct colour, pattern, or sometimes by illustrations of the plants and animals which populated the period. And each period of time is given a name, with which we a very familiar too: the Cretaceous age, the Silurian age, the Triassic period, and of course, the Jurassic era.

Implicit in these codifications of time are a number of assumptions. They are premised on the idea that time is linear, sequential and progressive—that one 'period' follows on from another and will continue to do so *ad infinitum*. Also implicit to this schema is the assumption that the natural world will continue to undergo gradual (natural?) change—to evolve—towards some more perfect or 'fitter' state of being.

Metaphors of 'evolution' and 'natural' selection recur again and again in popular culture. The current, immense popularity of *Pokémon* presents a site for the playing out of a new understanding of evolution. Previous understandings of evolution, as some inevitable force which was, or should be, beyond human intervention, are changing. In the world of the *Pokémon*, whose codes spread over into the thinking of our world, the verb 'to evolve' has become active—something culture *does to* nature. With *Pokémon* it is possible, even desirable, to speak of 'evolving' a creature, undertaking certain actions which will bring about a change in the creature. And this is conceived as a positive happening. My ten-year-old son, who owns a version of the *Pokémon* game for a hand-held computer often speaks of "really wanting to evolve my Pikachu/Polywag/Squirtle". To 'evolve' a creature is something he is able to do, something within his control. So our understanding and application of the term 'evolution' is itself subject to change...to its own unpredictable evolution.

fig. 1.6 Pokemon characters Pikachu (left), the 'evolved' version of Pikachu called Riachu (centre), and Mewtoo (right), a genetically engineered version of the the Pokemon called Mew.

In *Jurassic Park* Spielberg presents a tension between the 'chaos theorist' Malcolm's initial embracing of the aleatory qualities of 'life' and his later condemning of the dinosaur project. When Malcolm voices an objection to the dinosaurs on quasi-ethical grounds, Jurassic Park's owner, John Hammond, suggest to him that his opinion would differ if the aim of the project had been to genetically engineer a colony of condors, a species of bird nearing extinction in North America. Malcolm replies:

"This is not some species that was obliterated by de-forestation, or the building of a dam...Dinosaurs had their shot and nature selected them for extinction..."

This is a curious argument for a chaos theorist, who is probably more likely to have embraced the reappearance of the dinosaurs in the late 20th century on an island somewhere in the Pacific Ocean as an example of the predictability of unpredictability. So it becomes apparent that what the dinosaurs threaten is the status of the time-line as some form of universal evolutionary truth— the existence of the dinosaurs presents a hiccough or stutter in the code in terms of upsetting the continuous voice of the Darwinian paradigm of natural history.[9] The dinosaurs' escape from physical containment is less of a worry to Malcolm and his fellow scientists, palaeontologists Sattler and Grant, than their escape from the evolutionary encoding of time.

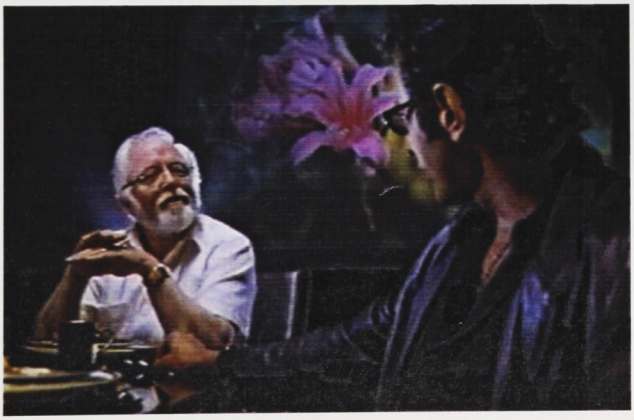

fig. 1.7 Park owner Hammond (left) discusses evolution with chaos theorist Malcolm (right).

[9] The dinosaurs' ability to transgress the progressive and linear ordering of time can be related to Foucault's examination of the institutional organisation of knowledge, which Douglas Crimp has described as "the replacement of those unities of humanist, historical thought such as tradition, influence, development, evolution, source, and origin, with concepts like discontinuity, rupture, threshold, limit and transformation." See Douglas Crimp 'On the Museum's Ruins' in Hal Foster *The Anti-Aesthetic: Essays on Postmodern Culture*, Washington: Bay Press, 1993, p45.

5. Reproducing the code

Spielberg's portrayal of ideas relating to sexual and other forms of reproduction offers a source of imagery which illustrates that the dinosaurs may originate from the descriptive device of the code but break free of it—that copies are able to take on more information than the model on which they were based.

In the movie, the colony of dinosaurs in Jurassic Park have been 'designed' to eliminate the possibility of breeding. To maintain this reproductive control, only female dinosaurs were produced in the park's laboratories. But the inclusion of DNA fragments from other creatures, in this case a kind of frog, to form the complete genetic profile used to produce the dinosaurs allowed for a mutation or irregularity which let the dinosaurs change sex.

According to Baudrillard's conception of the code, the dinosaurs are living, breathing embodiments of genetic code—'perfect descriptions' of the natural world. However, the film's narrative tension rests with Spielberg's interpretation of the code and its capacity to describe the natural world: Spielberg depicts the 'descriptions' as being able to 'describe' themselves through sexual reproduction.

In the movie, chief palaeontologist Grant finds empty, hatched eggshells in one of the dinosaur paddocks, indicating that at least one of the dinosaurs had produced offspring. The eggs here indicate new life, but not necessarily life conforming to the patterns of reproduction which in Jurassic Park have come to symbolise security through continuity. Here the eggs symbolise uncertainty, instability; the evidence of new life, and the ability to produce copies, is as unsettling as it is reassuring.

fig. 1.8 Empty eggs shells in one of the dinosaur enclosures indicate that the dinosaurs have started to breed.

In the act of reproduction the dinosaurs have begun to copy themselves. The new generation of dinosaurs then are copies of copies. The genetic codes of Baudrillard's age of simulation and technology 'evolve' to become the codes of a different form of production/reproduction. In a turn of the scientific tables, technology is harnessed by nature and the agency of change reverts to the previous model of 'natural selection'.

The tension of the narrative rests on the 'danger' inherent in the fact that the dinosaurs are able to change themselves; these copies change (in this case change sex) in order to ensure the continuation of the copying process (reproduction). And it may imply that the new generation of copies are different again, possibly including males among the population.

The movie thus anticipates the discovery in the late 1990s that Dolly the cloned sheep, and her progeny Molly and Polly, will age faster than the sheep on whose genetic material they were based. It has been suggested that as the sheep were derived from six-year-old genes, their cells began life at this genetic age, regardless of their chronological age. These copies are not the same as their original matrix.

fig. 1.9 Dolly, the genetically engineered sheep.

The dinosaurs are also portrayed to be intelligent, able to respond to their environment in original ways, to think and to plan. Indeed they would not pose such a threat if they were simply robotic, identical copies which all behaved in the same way. These copies illustrate an agency that defies the supposed hierarchy of the original over the reproduction.

That the dinosaurs, genetic simulations, can copy themselves, highlights a potential omission in Baudrillard's writings on the code: he focuses on the code as a potential source of absolute control over the descriptive and productive process of image-making and does not consider the potential 'life' of the image after its making, seeming to disallow agency or activity of an object/text produced by way of the code, the metaphor at the core of the *Jurassic Park* narrative.

Thus Baudrillard's account of the simulated era of the code does not seem to allow for mutations in the text or for the coded message to change through the process of production, much like the changes to the message in the children's game of 'Whispers'. The dinosaurs in *Jurassic Park* anticipate this flaw: the dinosaurs, like Dolly the sheep, are able to reproduce, and each subsequent copy has an evolutionary potential allowing it to be slightly different to the last. What then of the perfect descriptive potential of the code?

In other scenes in the movie imagery which connects the symbolism of the egg to the production/reproduction of life is used. When Sattler, Malcolm and Grant are first shown through the breeding laboratories of Jurassic Park, the hatching incubator houses a batch of velociraptor eggs *(see fig 1.5 on page 11)*. Of course the eggs aren't those of a velociraptor but ostrich eggs which have been used as surrogates. This marks a departure from the scenario presented in Crichton's novel *Jurassic Park*, where the dinosaur embryos were hatched in plastic eggs. Spielberg's choice to replace the synthetic eggs with 'natural' ones highlights the instability of notions of nature and artifice within the movie. The ostrich eggs are as much copies as the plastic ones in terms of their substitution for dinosaur eggs.

The use of ostrich rather than plastic eggs serves to accentuate the other instances of technological management of the project, but also sets up a tension in the familiar binary relationship which pairs technology with that which is bad and nature with that which is good. The codes of computer programming drive the technological mimesis of the natural mother, as when the robotic arm gently turns each egg and reprimands Grant for touching one of them *(see fig 1.5 on page 11)*. This metal/maternal arm activates expectations of a nature/technology divide, but the robot's apparent care and concern for the eggs and our knowledge that the contents of the egg are clones, and the embryos created by programming 'blank' cells with a genetic code unsettles this too easy pairing. The relationships do not fit into the neat binary code of nature/culture: the 'natural' eggs contain the code whereas the 'synthetic' codes of computer technology can be kind and caring. In *Jurassic Park* the difference between nature and artifice, nature and the code is deliberately and creatively blurred.

6. Codes and control

So far I have concentrated on the codes of genetic engineering in *Jurassic Park*. But what of the other codes? How do they control and describe the world of Jurassic Park? In the movie, the computer system is supposed to control all life on the island, all comings and goings. The systems have all been designed by Denis Nedry, the ill-fated and greedy computer nerd, his name a simple recoding of the letters N, E, R, D and Y (NERDY)[10]. Nedry has created the computer systems which are to manage all the islands functions from surveillance of and accounting for the movements of the dinosaurs to the security systems which lock and unlock all the human and animal enclosures. The computers are linked with cameras and monitors to relay coded images and other information about the dinosaurs from the furthest parts of Isla Nublar back to the Visitors' Centre, where the 'control' room is located.

fig. 1.11 Denis Nedry, the ill-fated and sly computer nerd.

But when the velociraptor breaks the code of the secure computer control room, it has side-stepped the human codes of key pad locks with computerised PIN numbers and simply smashes the window next to the locked door to enter the room. Codes rely on a common protocol and agreement among users to effectively transmit a message—they are only useful to users with a shared knowledge of their rules and practices[11]. Whereas the humans were satisfied that the computer coded locks would keep them safe, the velociraptor was not to be halted by the sight of a numerical key pad holding the secret code with which to open the door—this was no deterrent when all entry required was not a broken code but a broken window. Thus the

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10 Denis Nedry's name can be 'decoded' further to form the anagram SNIDE NERDY, a fitting description of the character's personality.

11 Fiske, John, *Introduction to Communication Studies*, London: Methuen, 1982, p69.

computers of Jurassic Park can control the human inhabitants, those users who share a common understanding of these codes, but cannot control the dinosaurs.

So from within the security control room, the velociraptor is now able to watch the movements of the humans who are trapped in the ceiling cavity above the room. In a reversal of roles, the dinosaur peers up through the gridded panels from which the ceiling has been constructed, lining up the humans in the sights of the metal mesh. Previously the computers have watched the dinosaurs, providing regular reports on the animals movements within their enclosures and notifying security if the movement sensors do not detect a presence for an extended period. This is a kind of negative monitoring, where presence is assumed unless absence is reported, and where the computer searches only for the expected number of creatures and alerts only when this number is below the mark. However the implicit danger was not too few dinosaurs inside the enclosures but too many; the possibility of the copy, that dinosaurs might multiply, had been completely overlooked. In *Jurassic Park*, life exists beyond the code.

The computer codes of Jurassic Park are only as effective and descriptive as they have been programmed to be. They are reliant on usage according to a limited or agreed set of rules; usage beyond predetermined conventions, which Fiske has called 'aberrant readings'[13], can render them ineffective, out-moded and blind. It is the resulting copies, the products of the matrix and not the matrix itself, which hold agency on Jurassic Park.

The multiplying dinosaurs indicate that an expectation of the code being an absolute descriptor carries its own risks. In this hypothesis, the codes designed originally to control the dinosaurs were eventually adopted by them to take control, breaking free of the pre-programmed genetic information as well as the computer data of the surveillance and accounting systems used to monitor them. The fictitious scenario enacted on Isla Nubla shows that codes do not always correctly describe—that the copies emitting from them can change (evolve) and can effect changes on the code, adopting new meanings through

13 ibid p83. Fiske also cites Umberto Eco's notion of 'aberrant decoding' as a parallel term. See Eco, Umberto 'Towards a semiotic inquiry of the TV message' in *Working Papers in Cultural Studies No. 3*, Birmingham: University of Birmingham, 1972, pp 103–121.

usage—and that these changes may put the copies outside the view or set of instructions which produced them.

7. Escaping the confines of the cinema aisle

A movement beyond the boundaries of the descriptive codings of the *Jurassic Park* storyline is also apparent. Even the movie's premise of the genetic engineering narrative cannot stay 'safely' within the bounds of the celluloid frame or cinema aisle. In *Jurassic Park* the viewer is confronted by a mixture of fact and fiction, elements which blend so well at times that it is hard to determine what is scientific reality and what is movie fiction. The currency of the genetic engineering debate allows the movie to present a narrative which even at the time of its release sounded absolutely credible: significant developments in genetic engineering since the movie's release in 1992 indeed indicate that the stuff of 'hard science' has first been known as speculative story-telling. Major scientific events such as the birth of Dolly in 1997, the recent unearthing of an intact woolly mammoth, frozen for 23 thousand years, and the accompanying scientific project to generate a living mammoth based on its DNA, and closer to home, the project announced in 1999 to begin research into the cloning of Tasmanian Tigers, have captured popular media attention. These events have served to increase rather than decrease the public expectation that one day dinosaurs could be brought back to life.

In the movie, the blurring of the division between fact and fiction, and audience and actor, is used as a strategy to convince the viewer of the credibility of the genetic engineering storyline. After seeing the herd of apatosaurs out in the park, Hammond takes the scientists to the Visitors' Centre, where they view a short animation explaining the processes that have allowed the dinosaurs to be cloned. The scientists are seated in a small auditorium to watch the film. Hammond stands at the front, near the cinema screen and as the film begins we see his image in the explanatory film as well. He seems to have a conversation with his 'screen' image, and when he pricks the finger of his screen image seems to draw a drop of blood. "Ow, that hurt", says the screen image. "Relax John" says

fig. 1.12 The scientists and Hammond in the Visitors' Centre cinema

Hammond, "its all part of the miracle of cloning." And from behind the 'screen Hammond', more Hammonds begin to appear.

Distinctions between who is watching what, who is audience and who is actor, begin to blur at this point. We, as the audience of the Spielberg's *Jurassic Park*, are watching a movie in which the actors are also watching a film. A film contained within a film, we are watching them watching. But we also see the same film that they see. Initially we see the the animated character called Mr DNA framed by the Jurassic Park cinema. At this stage it is still possible for us to assume the position of being in control of what is seen. The camera cuts to a close-up of Malcolm and Sattler, and then returns to the Mr DNA animation, and with this cut the film image occupies the entire screen we are watching. We are now located in the position of the scientists: also sitting in a cinema, we are watching exactly the same images that they are watching. The Mr DNA animation has escaped from the confines of the Jurassic Park Visitors' Centre cinema and is now showing

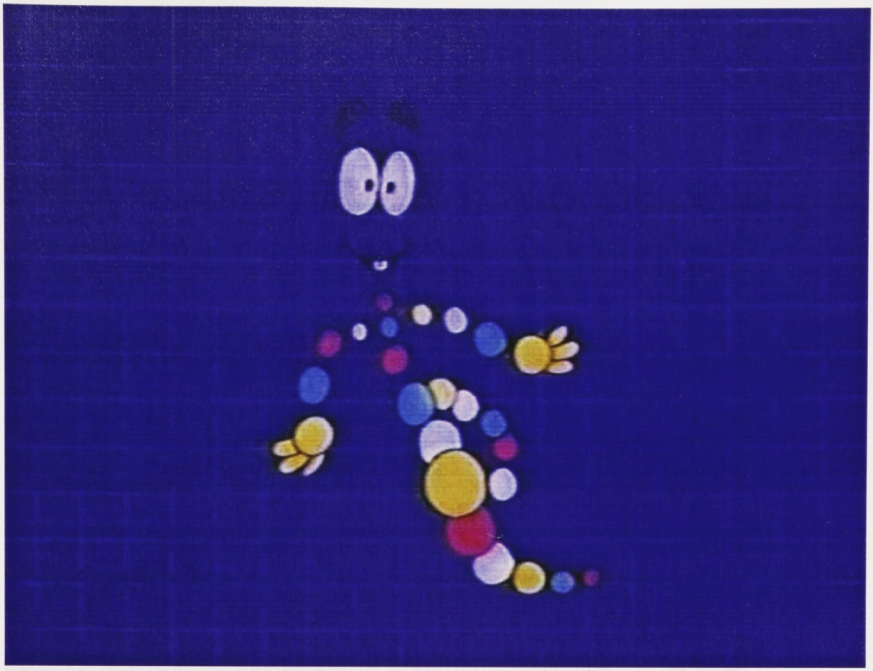

fig. 1.13 Mr DNA , the animated character used to explain the process/premise of genetic engineering.

in the cinema where we are watching *Jurassic Park*. And just as the scientists must believe the credibility of the genetic engineering premise, so do we.

As if to parallel the dinosaurs escape from the confines of their enclosures on Jurassic Park, the images and codes within *Jurassic Park* the movie have escaped beyond the walls of the cinema and video shop. The codes have mutated from the text of Crichton's novel, to the digital images and frames of Spielberg's movie and its sequel *The Lost World*, to the other 'spin-offs' and merchandise. *Jurassic Park* products ranging in size from 'collectable' dinosaur miniatures to the all-encompassing scale of a roller-coaster ride...T-shirts, lunch boxes, bed linen, band-aids...a marketing strategy "65 million years in the making", to coin the movie's by-line.

And of course, the now obligatory 'making of' book, although in a self-conscious twist, the movie acknowledges its own artifice and potential as a marketing pantechnicon. In a scene located in the Visitors' Centre, where Hammond and Sattler discuss the disastrous turn of

events, the camera pans past the Parks' retail outlet. Visible on the shelf alongside the lunch boxes and school bags (which were also available for the audience to buy through major department stores) is the spine of a book baring the title *The Making of Jurassic Park*.

fig. 1.14 A shelf in the visitors centre containing a book baring the title *The Making of Jurassic Park*.

So seriously was the narrative credibility of Jurassic Park considered to be that it also spurned a whole series of 'scientific' texts attempting to disprove the validity of the genetic engineering storyline. Titles such as *The Real Jurassic Park* did very little to debunk the 'Spielbergian myth', and simply extended the reach of the codes[13]. Actual scientific progress with cloning and increasing discussion of the ethics of genetic engineering in the mass media provided an ongoing channel for the codes of Jurassic Park to be communicated. So pervasive were the codes of *Jurassic Park* that natural history museums, the initial referent of the concept of Jurassic Park, now define themselves and their exhibits by using the term 'Jurassic' in a generic sense, to indicate anything that is prehistoric.

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13 Dugan, David *The Real Jurassic Park*, California: Universal, 1994

8. The final escape of the code

The codes within *Jurassic Park* have mutated and grown to become a code beyond the movie, a code through which other texts are defined and written. In this paper I have attempted to explore the ideas relating to a scenario not predicted by Baudrillard's understanding of the codes of the era of simulating nature, but certainly well considered by Steven Spielberg. Rather than conceive the code as an entity which is closed, programmable, predictable and passive, it may be possible to understand codes as dynamic and interactive agents. Referring to such texts, Elizabeth Grosz has observed:

> "Furtive, clandestine, and always complex, (a text) steals ideas from all around, from its own milieu and history, and better still, from outside, and disseminates them elsewhere ... A text is not the repository of knowledge or truth, the site for the storage of information... so much as a process of scattering thought, scrambling terms, concepts, and practices, and forging linkages, becoming a form of action. A text is not simply a tool or instrument... Rather, it is explosive, dangerous, labile, with unpredictable consequences... Texts, like concepts, do things, make things, perform actions, create connections, bring about new alignments"[15]

The metaphor at the core of the *Jurassic Park* narrative is the agency and activity of the code, illustrating how popular culture is able to unleash unpredictable and new understandings of the natural world. Spielberg's manipulation of these codes of simulation, within the storyline and as tools with which to create the film, highlight the potential for locating short-comings in Baudrillard's positioning of codes as predictable, programmable descriptors of a simulated world. Spielberg presents numerous images which explore the creative potential of the code: the velociraptor, wrapped but not trapped, within its web of code; the rupture of the evolutionary encoding of time and the reproductive technology which allows this; the creation of new codes within the movie (the new generations of dinosaurs) and outside the movie (the blurring of fact and fiction, cinema and science).

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15 Grosz, Elizabeth *Space, Time and Perversion*, New York: Allen & Unwin, 1995, pp126–127.

And so to the final dinosaur scene in Jurassic Park. One of the velociraptors seem to have cornered Grant, Sattler and the children in the visitor's centre rotunda. All of a sudden there is a tremendous roar and the Tyrannosaur Rex bursts into the hall. Originally only scripted to appear in the earlier chase scene, the T-Rex makes her reappearance inside the building, not just thanks to the codes of genetic engineering of Jurassic Park, but thanks to the digital codes of computer image-making which allow the huge animatronic creature to appear to be interacting with the human actors and set. Momentarily distracted, the velociraptor allows the humans to escape. Its attention has turned to its mate, who the T-Rex attacks and kills. The velociraptor hurls itself angrily at the immense tyrannosaur, clinging to its back being flung off into the huge dinosaur skeleton which is suspended from the rotunda ceiling. The thousands of bones, each a unit in another form of coded reconstruction of the dinosaur world, come crashing to the ground, lying in a confused heap at the feet of the new and victorious encoding of dinosaur data. The humans have long gone and the dinosaur is left free to roam the island. In the final shot of the dinosaur, an advertising banner drifts slowly down from its attachments on the ceiling. The long strip of cloth drapes over the dinosaur, containing it in large printed code, which reads "WHEN DINOSAURS RULED THE EARTH...". But this containment is only momentary, the banner slips and as it does T-Rex lifts its head and lets out a huge roar, escaping once again.

fig. 1.15 The T-Rex enters the Visitors' Centre and kills one of the velociraptors.

fig. 1.16 The final dinosaur scene: the T-Rex roars as it slips free of the banner.

Sub thesis 2: The Dispersed Object: the spatiality of printed art

Introduction:

In this paper I will examine the idea that prints have a connection to space which goes beyond the depiction of three dimensional spaces on a two dimensional support. I am interested in the idea that prints not only inhabit spaces but may define spaces and movement through them. The paper will consider space as something other than a bounded, finite entity, and examine ideas of diffusion and proliferation in relation to space. Foucault's writings on heterotopic space will be considered as a conception of space which reflects diffusion, mutability, and movement rather than containment and stasis. An inversion of some of the defining features of Foucault's heterotopic space will be suggested as a possible starting point for understanding the relationship between prints and space. This paper considers prints existing in spaces other than the gallery or behind a matt and frame. The print-based work of Felix González-Torres, Jenny Holzer, Xu Bing and Matt Mullican will serve as examples through which some of the connections between prints and spaces can be examined and established.

I remember hearing once how, at any moment in time, one is never further than a metre away from a spider due to their abundance. Lately, as a result of musing over the place and importance of print-based art forms within contemporary visual practices, it has occurred to me that this may have a connection to printmaking. As I look around, where ever I am, I am never further than a metre from a print either.[16] Prints fill the spaces that I inhabit: grocery packaging, newspapers and magazines, the school crest on my son's school uniform, street signs, the double yellow line in the middle of the road, the zebra crossing. My experience of printed matter, objects, surfaces, is not only limited to the time I spend at university studying in a print studio, nor to the time I spend in galleries.

In response to writings such as those by Robert Nelson[17] and Ruth Weisberg[18], who argue that printed art is a field of visual arts practice which refuses to construct for itself a "framework of ideas and concepts that would locate such practice in relation to the larger intellectual paradigms of our time," I am attempting to highlight a critical basis for artists working with print-based media.[19] Contrary to Nelson's arguments in the essay "Why Printmakers Can't Talk", prints, from the fine art object to that of commercial ephemera, are very much connected to 'the rituals of daily life' and to the spaces in which we move and live.[20] My interest in locating a linkage between print-based practice and space is in reaction to critical writings which position printed art as irrelevant and outmoded in the contemporary era. In the early 90s there was little evidence of critical or theoretical debates within much mainstream print-based art practices. However, since that time, many artists making use of print have done so in ways which explore and critique our understandings of crucial issues such as the 'original' object, the various roles of viewer and artist in creating the meaning of a work, and the need (or other wise) for a 'physical' product to constitute a work of art. Print-based art works such as those by Jenny Holzer, Felix González-Torres, Xu Bing, Matt Mullican and many others, indicate that it is time to reassess our understanding of the theoretical bases of printed art.

So, as a result of considering some characteristics of my own studio practice, I've been thinking about prints and space, and speculating as to whether it's possible to

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16 As a corollary to this I am now wondering if there is a connection between a fear of spiders and the art world's dismissal of printed art. While arachnophobia is the term defining fear of spiders, I am not aware that there is a word which means fear of print, although this seems to be a common disorder.

17 ibid.

18 Ruth Weisberg, "The Absent Discourse: Critical Theories and Printmaking" in *The Tamarind Papers*, v13, 1990.

19 ibid, p8.

20 Robert Nelson, "Why Printmakers Can't Talk" *Art Monthly*, no. 54, October 1992, p11. In a frustrating irony, Nelson goes on to devote the bulk of his essay to arguments based on pedantic formal grounds thus managing to ignore the very issues and debates he criticises print-based artists of ignoring.

conceive of a spatiality *of* prints. Prints have the potential to exist as multiples, in many places and spaces at once. They may also exist as 'states', as records of their own history and temporal movements. The history of print as a mechanism for communication also marks a connection with movement and space. I am interested in the hypothesis that due to these and possibly other characteristics, printed objects may be seen to have a particular relationship with space.

On first consideration a relationship between prints and space would seem to imply a paradox: prints are very often flat objects.[21] Their manufacture generally implies a process of impression, flattening out, pressure and pressing, the transfer of a thin layer of ink from one surface to another. Conventionally, prints have been made on paper, which is a thin, almost 'dimension-less' support. The printed image is formed by a minute layer of ink which is often indistinguishable from the body of the paper on which it rests. So it is quite easy to categorise print-based art forms as those of two dimensions, any connections to three dimensional space being restricted to those of illusion—the representation of 3D space by way of visual 'tricks' such as perspective.

However, the potential for prints to exist as multiples, as identical images in separate locations, carries with it an implication for the occupation of space. Most editioned prints are made with the intention that they will be spread out, exhibited or sold separately. Their purpose in being reproduced therefore is to enable an existence in many places at once. Here the relationship with space is one of dispersal, as a network of coordinates rather than a contained space or bounded form. Considering prints in this way is a reminder that the original function of the printing press was to produce printed information for dissemination.[22]

In order to analyse and locate possible relationships between prints and space, I will examine the print-based art of several contemporary artists: Xu Bing, Matt Mullican, Felix González-Torres, and Jenny Holzer. I am using the term print-based art so as to allow the consideration of work which makes use of printed elements as a substantial part of the piece, but may be manifest in forms other than the traditional folios and frames.[23] I hope, through an examination of such practices, that the boundaries (spaces) which define what we think of as 'a print' can be made

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21 The relationship between prints and space has often been thought of in terms of providing a support for the representation of spaces or objects in spaces. A preoocupation with the internal pictorial space of prints may have lead to other spatial implications being ignored.

22 Prints can also exist as 'states' as their own printed records of the processes or stages through which a print has passed, records of movement through a time and space. The relationship of temporality to space in printed art which incorporates states is a further example of how prints may be seen to occupy space, but is beyond the scope of this paper.

23 see Wye, Deborah, *Thinking Print: Books and Billboards, 1980–95*, New York: Museum of Modern Art, 1996. Wye has also termed these works 'multi-part prints', a term she uses to describe the practice of artists combining a number of elements to create a single work.

more flexible. This may assist in developing an understanding of the meaning, function and place of print-based art practices within the broader context of visual arts .

As W.H. Ivins noted some fifty years ago, the history and traditions of print extends far beyond the limits imposed by consideration only of prints produced via fine art techniques.[24] Hence, I am considering those forms of printed art which are produced by way of commercial techniques such as offset printing and photo-lithography, as well as more traditionally produced works.[25] This will be inclusive of printed art which appears not just upon a sheet of paper, but on other supports such as metal or wooden structures, taxi cabs or electronic signage: so long as it has been printed —reproduced via a matrix and transferred to another form—the work may be considered as 'print'.[26] Because of the history of associating those art practices which engage space with sculpture, artists working with printed art which is presented on a support other than paper or in a context other than a gallery, have often been discussed in relation to the critical frameworks of sculpture. There has been less consideration of these artists, and their work, in relation to the critical/theoretical debates framing contemporary print practice. And very little, if any, consideration that the boundaries between sculpture and print may merge in relation to issues of space. I am not interested in whether or not these artists see themselves as 'printmakers'; rather, I am interested in finding within their practice characteristics of art-making which highlight the diversity and relevance of printed art. Hopefully, by establishing connections to spaces other than the gallery and the museum, to the spaces of the everyday where meanings are constructed and lived out, a new relevance for even the more traditionally-based print practice will made be visible.

A characteristic common to printed art is the transference of image from matrix to support and the resulting implications for reproducability: from a single plate, many

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24 Ivins noted that "While the number of printed pictures and designs that have been made as works of art is very large, the number made to covey visual information is many times greater. Thus the story of prints is not, as many people seem to think, that of a minor art form, but that of a most powerful method of communication…and its effects upon western European thought and civilisation." See Ivins, W.M., *Prints and Visual Communication*, Cambridge Mass.: Harvard University Press, 1953, p158.

25 Artists making use of these forms are not often classified as 'print makers' possibly because they did not actually ink the plates and stand by the press as the print was made. However, this hardly seems to be an argument given the history of artists making use of technicians to produce famous works of art. The status of the Sistine Chapel as a painted surface is not in doubt because Michelangelo use minions to create it!

26 The range of technologies encompassed by this definition embodies those of traditional art-making such as etching, lithography and sculpture casting techniques, as well as those of computer-based technologies such as laser cutting/forming and digital image generation, the latter originating from defence/surveillance, medical or industrial research rather than from the visual arts. The birth of Dolly the sheep, and more recently cloned pigs and calves, herald the arrival of a new understanding of Ivins' 'exactly repeatable pictorial statements', in this instance produced from a matrix of genetic data. These new 'prints' raise many compelling and timely questions for artists working in reproductive media. However, given the parameters of my paper I have chosen only to look at artists who are producing work which takes a 2D print and multiplies it in a way that it begins to interact with the 3d space in which it is placed.

prints can be made. Hence works considered could include quite conventional etchings which are made by printing an image from a copper plate onto paper, or a computer print whose matrix is the set of binary data, or a factory screen-printed billboard. The artists whose work I have chosen to serve as points of reference for this paper have made use of a number of techniques including commercial offset printing, photo-lithography, screen printing, etching and frottage, and while not all the artists produce what has traditionally been called an 'edition' of their prints, the potential for the production of multiples is an intrinsic part of their work. It is these artists' use of prints to engage with space that allows consideration of printed art as a dispersed object.

Printed space

Despite an apparent dependence upon lived experience, understandings of space have been as much structured by the conceptual as they have been by the physical. As Margaret Wertheim argues the 'production' of space cannot be reduced/attributed solely to its physical components.[27] The term 'production' implies an existence which is not essential, or that which exists prior to human experience; it suggests that conceptions of space are mediated by factors such as language, and the ideology of the contexts in which they exist. Using the example of the virtual spaces of the internet and computer technology, Wertheim demonstrates that spaces do not necessarily need a bodily experience or physical form to be understood to exist. She also highlights, through an historical analysis of concepts of space, that understandings of space are subject to change and negotiation.

So, in suggesting that conceptions of space can be seen in terms of their dynamism, I am also suggesting that to find a connection between prints and space we may need to move away from an understanding of space as contained, fixed, or from those types of space implied by the scope of perspectival vision, where one person is all-seeing. It may be possible that a similar move away from a description of space based on the immediately visible, that which can be physically experienced, will be useful in an expanded understanding of the relationship between prints and space.

In his essay "Of Other Spaces", Michel Foucault proposes a kind of space that he calls a heterotopia. Foucault presents a collection of thoughts on how it may be possible to locate 'other spaces' within the "more obvious and diverting multiplicity

27 Wertheim, Margaret, *The Pearly Gates of Cyberspace*, Sydney: Doubleday, 1999.

of real-world sights and situations".[28] These spaces are difficult to describe according to Cartesian spatial conventions of grids and binaries; heterotopic spaces are often hidden, are spaces within spaces, or are spaces which are defined by movement or transition such as passageways, or points of departure, embarkation.

According to Edward Soja, one of the defining features of heterotopic space is its capacity to encompass or juxtapose several sites within the one space.[29] The space of the internet may be seen as such as space, whereby the viewer is able to visit many 'sites' while remaining stationary. Guilliana Bruno also makes this connection with the spatiality of the cinema, locating the space of cinematic vision as heterotopic.[30] These examples indicate a kind of many within one relationship: one space encompassing several. The printed object which is editioned and dispersed is a kind of inverse embodiment of this form of heterotopic space. It is the single object occurring in many places simultaneously and denotes a kind of space which may be perceptually unknowable.

In words which anticipate the changes in understanding of space which are currently being forged in new digital technologies, Foucault observed that "the present epoch will be above all the epoch of space. We are in the epoch of simultaneity, we are in the epoch of juxtaposition, the epoch of near and far, of the side-by side, of the dispersed."[31] These characteristics, of multivalency, of the simultaneous existence of one object in many places, of dispersal and diffusion, can also be seen to apply to more conventional print-based art practice.

Prints, space and movement: the print-based works of Jenny Holzer.

Much of Jenny Holzer's printed-based work occupies spaces of urban transit. Spaces of movement, transience, like the airport, the freeway, the parking station, are spaces which Benjamin Genocchio suggests Foucault would have described as heterotopic.[32] A notable feature about these spaces is that they are spaces in which printed matter proliferates.

Despite its quantity, printed matter in streets, subways, carparks and shopping centres in some ways goes unnoticed. Its message may be attended to, but its

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28 Soja, Edward W., 'Heterotopologies-A Remembrance of Other Spaces in Citadel-LA' in Sophie Watson and Katherine Gibson (eds.) *Postmodern Cities and Spaces*, Oxford: Blackwells, 1995, p14.

29 ibid, p14.

30 Bruno, Guilliana "Bodily Architectures" in *assemblage*, no. 19, 1992, p110.

31 Foucault, Michel "Of Other Spaces", in *Diacritics,* vol. 16, no.1, Spring, 1986.

32 See Genocchio, Ben "Discourse, Discontinuity, Difference: The Question of 'Other'Spaces", and Soja, Edward W., 'Heterotopologies-A Remembrance of Other Spaces in Citadel-LA' both in Watson, Sophie and Gibson, Katherine, *Postmodern Cities and Spaces*, Oxford: Blackwell, 1995

material quality, its repetition, its 'printed-ness' becomes almost invisible although it is on these qualities that its authority is dependent.

Jenny Holzer's print-based works make use of the formal qualities of the printed matter that is found in these places. Her works mimic inexpensive photocopies or printed flyers on various shades of pastel bond paper, the commercial screenprints which appear as advertising on taxis, and the repetitive texts which scroll on an endless

fig. 2.1 (above) and **fig 2.1** (below) Holzers *Trusims* texts as bill posters in New York.

which monumentality is balanced by mobility and engaged spectatorship is driven by distracted fleeting encounters".[33] Joselit suggests that the complementary relationship in which Holzer presents monumentality and mobility in her works is a "distinctly contemporary experience" of public spaces.[34] The repetition afforded by the printed car signage, and amplified by their transit through the city streets, created the 'critical mass' of the work. The audience would have perceived the work as one which simultaneously juxtaposed the space of the singular and the plural: single instances of the prints mark points of interaction between viewer and artwork while its multiple format and fixture to mobile supports acted to weave a continuous path throughout the city space.[35]

fig. 2.3 (top) Holzer's installation of the *Truisms* and *Survival* texts on a taxi, a component of her work for the 1996 Biennale di Firenze **fig. 2.4** (below) Holzer has also made use of urban trains as moving supports for her texts.

Through Holzer's work we see that printed objects do not only exist in space but may articulate movement through them. On first consideration this agency may not be apparent; Holzer's texts are often transient, throw-away, or in the case of the work which makes use of electronic signboards, offer an endless loop of repeating text. These works seem, at least initially, insufficient in physical presence to act upon the space in which they exist and move.

It has been suggested that Marc Augé's notion of 'non-places' may be used to locate the space of Holzer's works. Non-places have been described as locations of nameless passage and transportation, such as shopping malls, airports and entertainment arcades, sites which are structured as much by words as they are by building

[33] Joselit, David, "Voices Bodies Spaces: the art of Jenny Holzer" in Joselit, David et.al,*Jenny Holzer*, London: Phaidon Press, 1998, p57.

[34] Joselit, ibid, p64.

[35] Holzer also made use of moving supports for her texts in an installation of the *Survival* texts on the sides of Berlin trains. See fig 2.4.

materials such as metal, brick, steel and glass.[36] I concur with this point but would suggest that it is specifically the printed quality of the words, and other symbols, which allows them to define the space. The 'printed-ness' provides a quality of remove, of invisibility of the source or author. At the same time the printed quality suggests an omnipresent author of institutional and unquestionable authority. The words which describe the spaces and regulate movement through them are not hand-written texts which would indicate the author as a single, identifiable, fallible person. Here we can compare the authority of a printed sign with that of a graffiti artist's tag and message.

Augé goes some way to acknowledge the particular effects of printed words and symbols when he writes that these texts establish "the traffic conditions of spaces in which individuals are supposed to interact only with texts, whose proponents are not individuals but 'moral entities' or institutions (airports, airlines, Ministry of Transport, commercial companies, traffic police, municipal councils)".[37] While he acknowledges the institutional authority of the signs, and the level of remove this offers from being able to identify a single source of the message, he falls short of identifying the effect as being a specific function of the 'printed-ness' of the text. The mechanical process of producing the messages as prints (often screen prints, stencils, or offset prints) mediates between origin and destination. It smooths over the inconsistencies and idiosynchrasies of a hand written message, whose single author may be open to question by the 'mob'. The process adds authority by distancing and disguising the source. The multiple presence of the printed texts add an omnipresence to this authority.

Holzer makes use of the specific connotations and characteristics of printed matter to produce works which interact with space to chart a network of printed co-ordinates. In the case of the taxi-back prints, the network is a constantly moving web of points, often observed by a stationary viewer. This relationship is reversed in the *Truisms* piece posted around the streets of New York. In this instance the mobile city dweller/audience views the repeated/printed units comprising the larger work, and in doing so constructs a path through space to connect the prints. In both the works space is an active element and one which is intrinsically linked to the characteristics of 'printed-ness' and multiplicity of the print-based elements of the works. Their dispersal through the city spaces that Holzer chooses for their installation creates a web-like set of points, a description of space which is both

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[36] Joselit, ibid, p55.

[37] Augé, Marc, *Non-places. An Introduction to an Anthropology of Supermodernity* (trans. John Howe), London: Verso, 1995.

dynamic and diffuse, and which allows an understanding of the various installations of the print projects as dispersed objects.

Dispersed space and the prints of Felix González-Torres

Felix González-Torres is an artist whose work has been described by Susan Tallman as occupying a space which is both the "concise space of the sculpture and the dilute space of the edition".[38] The works to which Tallman specifically refers are González-Torres' printed paper 'stacks', neat piles of editioned prints, which he began making in 1989. One of González-Torres' first exhibitions of these paper 'stacks' was at the Andrea Rosen Gallery in New York in January 1990. Dietmar Elger recalls that his first impressions of the installation were that of entering the (really quite tidy) store room of a commercial printing business.[39] A number of stacks of paper of various heights and sizes were placed on the floor around the gallery's main exhibition space. Some of these stacks of paper were grouped together, either in close proximity or actually resting against each other,

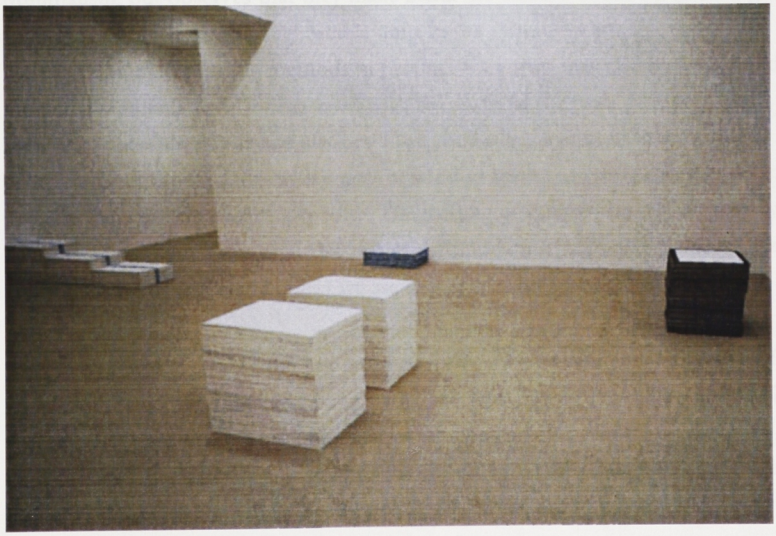

fig. 2.5 Felix González-Torres, installation of stacks at Andrea Rosen Gallery, New York, 1990, offset print, endless copies.

and some standing as isolated elements. Some were positioned against walls and others were on the open floor space of the gallery. Each stack was composed of offset prints which in formal terms were quite simple: a single central line printed in

38 Tallman, Susan, *The Contemporary Print: From Pre-Pop to Postmodern*, London: Thames and Hudson, 1996, p214.

39 Elger, Deitmar, *Felix González-Torres* Vol1, Spengel Museum, Hanover, 1996.

blue on one stack, a funereal black border on another, others printed all over with a single flat colour *(see fig. 2.5).*

The viewers of these stacks, as with all González-Torres' stack pieces, were free to take with them pages from the printed piles thus acting as agents of dipersal. The works were printed as 'unlimited' editions: their final number potentially infinite and production determined by the number of pages taken by viewers. At the close of the exhibition the gallery was required to restore the stacks to an ideal height pre-specified by the artist. This could also be done during the course of the exhibition if the gallery so chose, although only the closing replenishment of prints was mandatory. The ideal height and the replenishment of the stacks as they dispersed were prescribed by González-Torres in a certificate of authenticity accompanying each piece. Similar conditions were specified by the artist for his 'lolly spill' installations (in which the specified measure related to the weight of the artist and/or his partner) and for his printed billboard works.[40]

Nancy Spector relates the formal qualities of the stacks to the traditions of Minimalism, but observes that they make literal the seriality of the Minimalist genre (each stack is itself made of repeatable units in the form of printed pages).[41] The use of commercial printing methods to produce the prints may also be linked to the industrial materials usually associated with the minimalist prism. However, the individual pages do not always stack to form hard edges and neat lines: they may protrude from the stack or catch a gust of wind to scatter across the gallery floor. Despite their mass they lack a solidity. The shifting quantity of prints, perpetually decreasing and then increasing, also denies the (modernist) idea of a sculptural form as an unchanging and static object whose existence is independent to that of the viewer.

The give-away dispersal of the prints defies conventions whereby the dispersal of an artwork is tied to a financial transaction, the artist subverting the commercially driven New York gallery scene of the later 80s and early 90s. They also deny the conventions of printmaking relating to the closed set of the edition and the finite quantity of copies implied by the imprint details of the print.[42]

The first stack and lolly spill works developed from the artist's interests in monuments, memory and meaning, at the time his partner was diagnosed HIV

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[40] Gonzáles-Torres' 'lolly spill' installations operated on the same principle as the printed stacks in that veiwers were free to take objects from the spill, this time eating the work. The same cycle of depletion and replenishment also operated, with the gallery required to replenish the lollies at the close of each exhibition. The spills took various forms, sometimes heaped into a corner or spread out in a thin layer across the gallery floor.

[41] Spector, Nancy, *Felix González-Torres*, New York: Guggenhein Museum, 1995.

[42] Indeed much of González-Torres' work was driven by his political concerns: the greed of the mainstream gallery system, the erasure of histories of many minority groups in the US, the AIDs epidemic, and the increasing strength of right-wing organisations such as the National Rifle Association, were some of the concerns poetically given voice in his art practice.

positive. The works were made from a desire to create an indestructible memorial, an indelible memory of a loved one. The continual cycle of dispersal and replenishment of the works, and the new lives lived by the dispersed elements ensures their existence. It is an irony that the materials which make this permanence possible are the materials of impermanence—paper, ink, and sugar—ordinary objects of consumption, more often associated with the temporary than the monumental. Of the play between permanence and impermanence allowed by the printed stacks, González-Torres observed : "All the pieces are indestructible because they can be endlessly duplicated. they will always exist because they don't really exist or because they don't have to exist all the time...there is no original, only one original certificate of authenticity."[43]

An early stack piece, *Untitled (Still Life)* 1989, was printed with an auto-biographical text of events, names and their corresponding dates *(see fig. 2.6)*. However, as with all González-Torres' 'self-portrait' works, the order in which the events are listed does not correspond to that of linear history as it is conventionally recorded. These events and dates moves forward and backward in time, evoking the sequence in which memories are recalled rather than an effort to impose an order upon them, or restore them in the sequence in which they occurred.

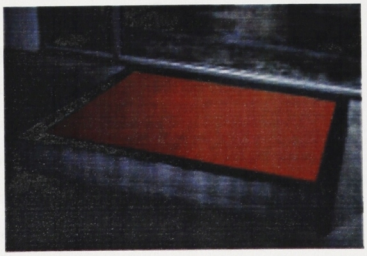

fig. 2.6 (top) Felix González-Torres, *Untitled (Still Life)*, 1989, offset print, endless copies.
fig. 2.7 (below, right) Felix González-Torres, *Untitled*, 1991, offset print, endless copies.
fig. 2.8 (below, left) Felix González-Torres, *Untitled (NRA)*, 1989, offset print, endless copies.

[43] Felix González-Torres, interview with Tim Rollins, in Elger, Deitmar, *Felix González-Torres*, Vol 1, Hanover: Spengel Museum, 1997, p104.

The actual sequence of these events is probably of little consequence now, because, as memories, they can be recalled in an endless variety. This points to an irony in the subtitle of the piece—*Still life*. This life is far from still. The narrative offered by González-Torres moves backwards and forwards, denying the regularity of a linear recollection. The dispersal of the prints also disperses the 'life' of the artist and articulates González-Torres' interest in the writings of Roland Barthes. The dispersal made possible by the editioned prints enacts Barthes notion of the 'death of the author' and 'the birth of the reader'. For Barthes, the meaning of a text was something that was up for constant renegotiation according to the context in which it was presented. "The reader..." or viewer "is the space on which all the quotations which make up the writing are inscribed...A text's unity lies not in its origin but in its destination."[44] González-Torres conceived these works as being comprised as much by the dispersed prints as by those inside the gallery. That the stacks can be endlessly replenished, that their original 'life' continually finds new destinations, is premised firmly on their status as editioned prints.

Spector suggests that the endless replenishment of González-Torres' work alludes to notions of travel.[45] In 1993 González-Torres simultaneously presented exhibitions titled *Travel#1* and *Travel #2* in two separate locations. This required the audience to move from one site to the other to see the entire body of work. The work seems to have broader implications of movement and space than those implied by the word 'travel' as used by Spector. It may be that she adopted this from the artist's own titles from these specific exhibitions. With regards to Gonzalez-Torres larger body of work, and printed work in particular, he was able to create a multivalency that the singular, linear connotations of the word travel does not embody.

González-Torres' work concerns a general and aleatory sense of movement, of endless transition and flux, of which travel may be a specific type or subset, and denies the sense of closure that certain usages of the term travel may imply. The printed pages of his stacks spread out endlessly in a rhizomatic structure which never returns to the place it started. The self-portraits with their random listing of words and dates, deliberately deny the format and order of a linear time line; their erratic movements forward and backwards through time have no connection to the

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44 Barthes, Roland, "The Death of the Author" in *Image Music Text*, London: Fontana, 1997, p148.

45 Spector, Nancy, *Felix González-Torres*, New York: Guggenhein Museum, 1995.

beginning and end of a journey. The prints leave the gallery to take up new 'lives', inhabit new locations and the space that is left is filled again by the next edition.

The spaces created and charted by the printed stacks of González-Torres indicate the diffuse spaces of all editioned prints. The constant regeneration of the prints and the new 'lives' they assume once they have left the gallery create a tension with conventional understandings of monumental space, and allow an understanding of the printed edition as dispersed object.

The all-seeing blindness of printed communication: Xu Bing's *Tianshu (Book from the Sky)*

Xu Bing is a Chinese-born artist, now living in New York. Possibly the most well known of his print-based projects is the installation *Tianshu (Book from the Sky)* 1987–1991 *(see fig. 2.9)*. It is a work which explores the capacity of printed publications to disseminate information. The installation creates a physical space which occurs in parallel to the work's allusions to the political and economic use of printed materials to create and control space. *Tianshu* has been exhibited all over the world and is held in the collections of numerous major art institutions, its own duplication and movement also marking a path in space. In providing a commentary on printed texts as the dipsersed objects of mass communication, Xu Bing's *Tianshu* has also become a dispersed object.

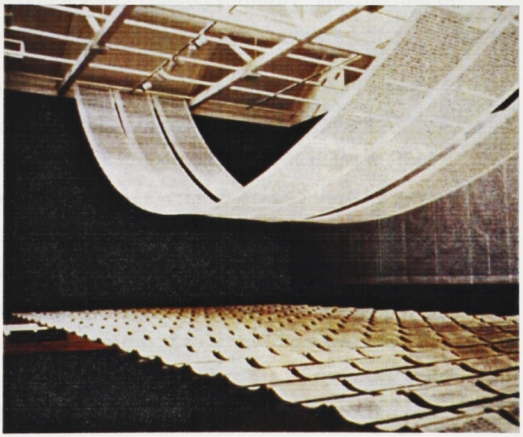

fig. 2.9 Xu Bing, *Tianshu*, 1987–91, printed books, scrolls and paper screnns, dimensions variable.

The installation *Tianshu* is made up of three elements: long printed scrolls or banners, suspended at each end to billow down into the gallery space, and which according to the artist allude to the Buddhist sutra scrolls; a grid of opened books each beautifully hand bound and printed; and wall panels, also printed and

suggesting the bill poster style printed wall texts traditionally used to communicate dissent in China.[46]

Each of the components bear printed text, and each alludes to a form of mass communication. However, the characters used to print the pages and lengths of text are completely fake. Xu Bing created and carved around 4000 characters (approximately the same number of characters which appear in an edition of a Chinese newspaper), to produce a work which is monumental in physical scale as well as in the scale of the labour required to produce the installation. The typeface made and used by Xu Bing mimics that used in books and newspapers, texts printed for public consumption. In this respect it differs from calligraphic forms of text which may be for private contemplation. Calligraphic texts also bear evidence of the maker's hand, unlike the mediated distancing of the author allowed by printed characters. Xu Bing was quite conscious of the anonymity allowed by printed texts stating that he did not want to impose or give voice to his own personality in the text.[47] He noted also that he felt that this 'public mode of communication' already belongs to everybody, not only him.[48]

The irony or 'joke', as Xu Bing has called it, lies in the fact that while his printed pages mimic the style and form of the text of public spaces, rather than communicate shared information and meanings, the pages of *Tianshu* offer an unintelligible collection of repeated symbols. Xu Bing states that he developed the work as an expression of "a certain doubt about cultural authority" and the use of printed materials for 'common good' during the Cultural Revolution.[49]

Tianshu is paradoxically monumental; when viewing the installation the feeling evoked by the large scrolls suspended from the ceiling is one of weight and substance. This does not accord with the knowledge that the piece is made from paper, a light and translucent support. The strange weightiness and monumentality echoes the power of the printed word; a mechansim without substance, yet extremely powerful. The opened book forms are arranged in a regular grid under the suspended scrolls. They are reminiscent of tiny roof tops viewed from a great height, and effect a shift in scale which transforms the viewer into a position of omnipotent view. The combination of the elements renders the viewer both above and below the texts, simultaneously seen and all-seeing. Possibly this is a reference to the state of enlightenment promised by the publishers of the text, a promise

46 Xu Bing, artist's talk at National Gallery of Australia, June 10, 2000.

47 Leung, Simon and Janet A. Kaplan, "Pseudo-Languages: a Conversation with Wenda Gu, Xu Bing and Jonathon Hay", in *Art Journal*, v58, no.3, Fall, 1999, p89.

48 in Leung ibid. p93.

49 in Leung ibid p93.

which Xu Bing may be presenting as hollow. The texts seem to say everything but yield nothing; they offer a complete vision of the world, but their profusion blocks the view.

The enclosing panels on the sides of the installation completely surround the viewer in text. This immersion is a clear reminder of the huge quantity of printed text, but also of its use to control and define understandings of the world. Xu Bing here directly references the relationship of print to propagation/propaganda through his manipulation of print and space. It is precisely because of the capacity for prints to be sent out, to be dispersed, and to occupy space, that printed matter has become such a powerful tool in political and economic terms.

Matt Mullican and the spaces of printed 'knowledge'

Matt Mullican is another artist whose practice has made use of print-based art forms as components for larger scale works. Much of Mullican's work concerns systems of knowledge, information and their representation, subject matter with a direct relationship to the printed form. Like Xu Bing, Mullican explores and exploits the functions of printed mass commuincation, although from a specifically Western point of view.

His work has often made use of the International Sign system, a pictorially simple code which is seen on many street signs and public venues, and which provides information to guide movement or identify a location. Mullican makes use of these symbols to examine homogenisation of information in the guise of generalised and universal cultural systems. He has added his own set of symbols to the code, often to represent non-physical states such as heaven or emotions. These symbols sit comfortably alongside those denoting a hospital or a restaurant, adopting the same quasi-objective, diagrammatic connotations of truth via simplicity.

In 1990 Mullican exhibited a work called *Untitled*, consisting of 449 oilstick rubbings taken from magnesium relief plates. The plates had been produced photographically from the pages of a nineteenth century encyclopedia. The rubbings reproduced in their entirety the illustrations from all 16 volumes of the encyclopedia.

fig. 2.10 Matt Mullican, *Untitled*, 1990, 449 oil stick rubbings on paper and 449 magnesium relief plates, dimensions variable.

The prints were arranged alphabetically in rows on the gallery walls, reproducing the order in which they would have appeared in the original publication. This arrangement had the effect of expanding the space of the book, once confined and safe between the covers, to the scale of the entire galley wall, where now all pages could be seen at once. Mullican's choice of media to reproduce the pictures creates a tension with this new vision of the information. While the new, open arrangement would seem to offer a clearer view of the information, the formal qualities of the oilstick rubbings transforms "the original optimistic precision of the illustrations into thickly pigmented, fuzzy approximations."[49]

The departure from the spatial organisation of the original publication, allows the illustrations to be viewed in combinations other than those imposed by the paired pages of a book and its alphabetical ordering. When viewed within the covers of the encyclopedia, the arrangement of entries in alphabetical order seems perfectly ordinary. It is not until the pages are extracted from the book, as with Mullican's prints, and presented side by side that a system which is simultaneously arbitrary and meaningful can be seen.

Within the encyclopedia relative importance may be denoted by the amount of space allocated to each entry rather than a correspondence to the linear sequencing of the pages. The result is a collection of 'things' which although it strives to represent the 'real world' in the most systematic fashion, it actually creates combinations and associations which otherwise would have no coincidence. All elements can be included under such an arrangement, but in doing so strange relationships are also created. As Eleanor Heartley noted: "Botany was followed by Brewery, Coach making by Craniometry"[50]. These juxtapositions which created alignments and linkages which were made to appear as charming and tenuous as

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[49] Tallman, Susan, *The Contemporary Print: From Pre-Pop to Postmodern*, London: Thames and Hudson, 1996, p204.

[50] Matt Mullican: exhibition review at Brook Alexander Gallery, New York, in *Art in America*, v79 nov 1991 pp. 149–150.

those of Jorge Louis Borges' ancient Chinese taxonomy.[52] It is this arrangement too which Foucault claimed as an example of heterotopic space; like the library and the museum, the encyclopedia offers a space in which many places, times and objects may co-exist.

Mullican takes these arbitrarily related entries and creates for them a new space. Movement between one page and the next is no longer determined by the publication's pagination. Their alphabetical order is maintained, but a new set of allegiances is established by the grid format used to arrange the rubbings on the gallery walls. This arrangement too changes according to the particular wall size of the gallery in which it is displayed. The grid may also be seen as a spatial ordering system which has been used to convey a sense of control, objectivity and truth.

It is Mullican's use of space in combination with the specific qualities of printing that is crucial in his project to examine the nature of systems of organising the 'spaces' of knowledge. It is not the characteristic of prints as actual multiples that is active here, as is the case in the stack works of González-Torres. In *Untitled*, Mullican makes use of the print's role as a mechanism for the reproduction of information, and the capacity for changes to occur through transmission, to highlight the potential inaccuracies of any recounting of information. It is almost as if Mullican uses the rubbings as a metaphor for the larger role of print in the reproduction and transmission of knowledge. Hence his choice of rubbings as a media which acknowledges the artist's hand as a reference to the larger artifice of the act of reproduction. Like Dorothy exposing the Wizard of Oz as an old and fallible man hiding behind the mechanics of technology which provide a veneer of anonymous, omnipotent, authority, Mullican's rubbing expose an author for systems of information which have long been accepted as universal. If the same images had been produced as paintings or drawings, the activity of the artist would be apparent, but a commentary on the role of print technologies in mediating between sender and receiver would not occur.

In short, this work derives much of its meaning from its characteristics as printed art. Similarly, the arrangement of the prints and plates in space is bound to the work's meaning, and is manipulated by the artist to create new correspondences, new sub-stories, within the work's larger meaning.

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52 In an encyclopedic classification of the animal world attributed to tenth century scholar Tai Ping Kuang Chi by translator Jorge Louis Borges appears the following which divides the animal kingdom into fourteen categories: "(1) Those belonging to the Emperor; (2) Embalmed; (3) Tame; (4) Suckling pigs; (5) Sirens; (6) Fabulous; (7) Stray Dogs; (8) Included in the present classification; (9) Frenzied; (10) Innumerable; (11) Drawn with a very fine camel-hair brush; (12) Et Cetera; (13) Having just broken the water pitcher; and (14) That from a long way off look like flies." This is the same taxonomy which led Michel Foucault to write "In the wonderment of this taxonomy, the thing we apprehend in one great leap, the thing that, by means of the fable, is demonstrated as the exotic charm of another system of thought, is the limitations of our own…" in R. Mabey (ed) *The Oxford Book of Nature Writing*, Oxford: Oxford University Press, 1995, p13 .

Dispersed objects, printed spaces

Despite their flatness, prints are inherently spatial. The characteristic of tranferance from matrix to support, of reproducability, which defines the printed object, allows for the editioned print to exist in many places simultaneously. It also allows prints to be considered as dispersed objects.

A number of artists have utilised these characteristics to produce work which highlights the connections of print to space. Gonzáles-Torres' stacks are works of diffusion and movement, depletion and regeneration. The one work is constantly in a state of flux, a status made possible by the artists use of print technologies. The endless edition of prints comprising each stack indicate that a printed multiple can be conceived as a singular yet dispersed object. The elements comprising this dispersed object indicate that the one object may occupy many places simultaneously, an inversion of Foucault's notion of heterotopic space which conceives of a space where many spaces exist in the one.

In the case of Holzer's various installation from her *Truisms* series, when the prints appear in numerous locations around a city the viewer acts as agent in connecting the points (prints) in space. When the prints appear on the back of taxis travelling around the city, they chart a shifting network of points with no fixed location. The dispersal of the taxi back and bill poster editions of *Truism* allows a description of space which is both dynamic and diffuse, and which allows an understanding of the various installations of the project as dispersed objects. Holzer's work also highlights the role of print as agent of anonymous authority in directing movement through the spaces of an urban environment.

Both Matt Mullican and Xu Bing consciously make use of the traditions associating printed matter and print technologies with the dissemination of information. Mullican's use of print as a mechanism for reproduction and transmission of knowledge highlights the changes that can occur as a part of these processes. His choice of frottage as the method of transferring information highlights the deliberateness and fallibility of reproduction, making clear the human participation in a process which historically has seemed unquestionable and anonymous. Mullican calls upon the role of print in structuring the spaces of knowledge and creates his own spaces through the various installations of the pages.

Xu Bing's use of print makes direct reference to the relationship of print to propagation/propaganda, a reference he further emphasises through his manipulation of print and space in the installation *Tianshu*. It is precisely because of

the capacity for prints to be sent out, to be dispersed, and to occupy space, that printed matter has become such a powerful tool in political and economic terms.

Prints are defined by their capacity to be produced in proliferation. Print technology has become such an integral part of contemporary urban existence that it is hard to conceive of a space one might visit which did not contain something printed. This is due to the specific relationship that prints have with space: as a dispersed object they enable the one thing to exist in many places simultaneously, or to occupy a shifting space. It is a characteristic which is both an embodiment of Foucault's notion of heterotopic space and which may indicate that printed art has a connection to the negotiation of space unlike any other media. Print is not only the technological precursor to digital and web-based media; it is also through the heterotopic understanding of space *embodied by print* that we can now make sense of the spaces of the web. It is print's relation to space which demonstrates its evolving and continuous (artistic) potential.

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